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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
SAMS, MATTHEW C	

ART UNIT	PAPER NUMBER
2643	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/008,332	SHPERLING ET AL.	
	Examiner	Art Unit	
	Matthew C. Sams	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☒ Claim(s) *31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/12/2002, 5/9/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statements filed 3/12/2002 and 5/9/2003 fail to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Specification

2. The disclosure is objected to because of the following informalities: The brief description for "Fig. 4" does not describe "Fig. 4" and "Fig. 5" is missing a brief description.

Appropriate correction is required.

Claim Objections

3. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next

following the highest numbered claims previously presented (whether entered or not). In this case, claim 26 is missing.

Misnumbered claims 27-34 have been renumbered 26-33.

4. Claim 31 is objected to because of the following informalities: claim 31, line 1 "claim 23" should be –claim 24—to be corrected. Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 4, 6-11, 14, 16, 19, 20, 22, 23 are rejected under 35 U.S.C. 102(a and e) as being clearly anticipated by Ramesh (US-6,205,127).

Regarding claim 1, Ramesh teaches a wireless communication system providing service to a plurality of mobile stations with phase-shift transmits diversity. (Fig. 1 [100], Col. 1 lines 12-16, Col. 3 lines 6-25 and Col. 6 lines 20-27) Ramesh teaches a phase-shift modulating a first signal with a first control signal producing a first phase-shift modulated signal and a second distinct phase-shift modulating a second signal with a second control signal to produce a second phase-shift modulated signal. (Fig. 5, 7, 15

and 16) Ramesh teaches transmitting the first phase-shift modulated signal by a first antenna and transmitting the second phase-shift modulated signal by a second antenna. (Fig. 5 & 7) Ramesh teaches the first control signal is synchronized with the second control signal. (Fig. 15, Fig. 16 and Col. 12 line 43 through Col. 13 line 29)

Regarding claim 2, Ramesh teaches a first phase-shift modulated signal including a first constant phase shift (Fig. 15 [1511]) and a first time-variable phase shift of 180 peak deviation (Fig. 15 [1513]) operable in a phase direction.

Regarding claim 4, Ramesh teaches a second phase-shift modulated signal including a second constant phase shift (Fig. 16 [1611]) and a second time-variable phase shift of 180 peak deviation (Fig. 16 [1613]) operable in a phase direction.

Regarding claim 6, Ramesh teaches a step of transmitting the first phase-shift modulated signal in a main antenna. (Fig. 5 [507-1])

Regarding claim 7, Ramesh teaches a step of transmitting the second phase-shift modulated signal in a diversity antenna. (Fig. 5 [507-2])

Regarding claim 8, Ramesh teaches combining a first input signal (Fig. 15 [501]) and a second input signal (Fig. 15 [1505]) to produce a composite signal, generating a first and second signal from the composite signal where the first signal is based on a first carrier and the second signal is based on a second carrier. (Fig. 15)

Regarding claim 9, Ramesh teaches the communication system operating according to the CDMA based communication protocol. (Col. 6 lines 20-27)

Regarding claim 10, Ramesh teaches a wireless communication system providing pluralities of mobile stations with an apparatus for providing phase-shift

transmit diversity. Ramesh teaches a first signal path to provide a first signal, a second signal path to provide a second signal, a phase-shift controller adapted to provide two synchronized control signals. Ramesh teaches a phase-shift modulating a first signal with a first control signal producing a first phase-shift modulated signal and a second distinct phase-shift modulating a second signal with a second control signal to produce a second phase-shift modulated signal. (Fig. 5, 7, 15 and 16) Ramesh teaches transmitting the first phase-shift modulated signal by a first antenna and transmitting the second phase-shift modulated signal by a second antenna. (Fig. 5 & 7) Ramesh teaches the first control signal is synchronized with the second control signal. (Fig. 15, Fig. 16 and Col. 12 line 43 through Col. 13 line 29)

Regarding claim 11, Ramesh teaches a first phase-shift modulated signal including a first constant phase shift (Fig. 15 [1511]) and a first time-variable phase shift of 180 peak deviation (Fig. 15 [1513]) operable in a phase direction.

Regarding claim 14, Ramesh teaches a second phase-shift modulated signal including a second constant phase shift (Fig. 16 [1611]) and a second time-variable phase shift of 180 peak deviation (Fig. 16 [1613]) operable in a phase direction.

Regarding claim 16, Ramesh teaches a first and second phase-shift element comprising a phase shift of 180 peak deviation. (Fig. 15 [1513] and Fig. 16 [1613])

Regarding claim 19, the limitations of claim 19 are rejected as the same reason set forth in claim 6.

Regarding claim 20, the limitations of claim 20 are rejected as the same reason set forth in claim 7.

Regarding claim 22, Ramesh teaches a phase controller comprising a four-port hybrid combination element. (Fig. 13 [1307])

Regarding claim 23, the limitations of claim 23 are rejected as the same reason set forth in claim 9.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 3, 5, 12, 13, 15, 21, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramesh.

Regarding claims 3 and 5, Ramesh teaches a first and second phase-shift modulated signal including a first and second constant phase shift (Fig. 15 [1511] & Fig. 16 [1611]) and a first and second time-variable phase shift of 180 peak deviation (Fig. 15 [1513] & Fig. 16 [1613]) operable in a phase direction. Ramesh differs from the claimed invention by not showing an ascending or descending deviation in phase direction. However, Ramesh teaches a realigning of phases. (Col. 10 lines 12-48) Therefore, it is obvious that one of ordinary skill in the art would be motivated to realign the phases by adding or subtracting angles with a difference of up to 180 degrees because the resultant waveform is repetitive if the difference of angles are greater than

180 degrees, any waveform achieved by adding angles can be achieved by subtracting angles and vice versa.

Regarding claims 12, 13, and 15, the limitations of claim 12, 13 and 15 are rejected as the same reason set forth in claims 3 and 5.

Regarding claim 21, Ramesh teaches a wireless communication system compatible with CDMA. The CDMA specification requires control reference signals of 19.6 MHz, an integer multiple of 1.2288 MHz, or an integer multiple of 50 Hz. Therefore, it is obvious that one of ordinary skill in the art would be motivated to use control reference signals compatible with the IS95 standard.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ramesh and Harbin et al. (US-5,488,737 hereafter, Harbin).

Regarding claim 17, Ramesh teaches a first and second phase shifting element, but differs from the claimed invention by not showing the element as a ferrite phase shift circuit. However, Harbin teaches adjusting of phases with a ferrite phase shifter. (Col. 12 lines 15-19) Therefore, it is obvious that one of ordinary skill in the art would be motivated to use the ferrite phase shifter of Harbin as the phase shifting element for Ramesh because they are commercially available and well known in the art.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ramesh and Millar (US-6,087,868).

Regarding claim 18, Ramesh teaches a first and second phase shift elements (Fig. 15 and 16), but differs from the claimed invention by not showing an open loop and closed loop linearization and compensation circuit. However, Millar teaches a phase

shift element in an open loop and closed loop linearization and compensation circuit. (Col. 4 line 65 through Col. 5 line 7) It is obvious that one of ordinary skill in the art would be motivated to use an open and closed loop linearization and compensation circuit of Millar as the first and second phase shift elements of Ramesh because the phase shifts should be consistent between the two shifting elements to simplify the realignment.

11. Claims 24-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramesh and Yada (US-5,748,669).

Regarding claim 24, Ramesh teaches a wireless communication system providing service to a plurality of mobile stations with phase-shift transmits diversity. (Fig. 1 [100], Col. 1 lines 12-16, Col. 3 lines 6-25 and Col. 6 lines 20-27) Ramesh teaches a phase-shift modulating a first signal with a first control signal producing a first phase-shift modulated signal and a second distinct phase-shift modulating a second signal with a second control signal to produce a second phase-shift modulated signal. (Fig. 5, 7, 15 and 16) Ramesh teaches transmitting the first phase-shift modulated signal by a first antenna and transmitting the second phase-shift modulated signal by a second antenna. (Fig. 5 & 7) Ramesh teaches the first control signal is synchronized with the second control signal. (Fig. 15, Fig. 16 and Col. 12 line 43 through Col. 13 line 29)

Ramesh differs from the claimed invention by not showing a computer program for the operation of the wireless communication system. However, Yada teaches a control unit (Fig. 1 [4]) for a base station that has a processor, which operates according

to programs stored in memory. It is obvious that one of ordinary skill in the art would be motivated to use the control unit of Yada in the wireless communication system of Ramesh for controlling the operations of the system because having a computer program automates the entire system and allows for remote control of the base station.

Regarding claim 25, the limitations of claim 25 are rejected as the same reason set forth in claim 2.

Regarding claim 27, the limitations of claim 27 are rejected as the same reason set forth in claims 3 and 5.

Regarding claim 28, the limitations of claim 28 are rejected as the same reason set forth in claim 4.

Regarding claim 29, the limitations of claim 29 are rejected as the same reason set forth in claims 3 and 5.

Regarding claim 30, the limitations of claim 30 are rejected as the same reason set forth in claim 6.

Regarding claim 31, the limitations of claim 31 are rejected as the same reason set forth in claim 7.

Regarding claim 32, the limitations of claim 32 are rejected as the same reason set forth in claim 8.

Regarding claim 33, the limitations of claim 33 are rejected as the same reason set forth in claim 9.

Regarding claim 34, Yada teaches a medium comprising one of paper, a programmable gate array, application specific integrated circuit, erasable programmable

read only memory, read only memory, random access memory, magnetic media and optical media. (Col. 6 lines 26-37)

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew C. Sams whose telephone number is (703)305-0810. The examiner can normally be reached on M-F 7:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703)305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MCS
2/4/05

GEORGE ENG
PRIMARY EXAMINER